



~~CONFIDENTIAL~~

HAZARDOUS MATERIALS
MANAGEMENT DIVISION

SEP 28 10 17 AM '94

27 September 1994

Mr. Richard Spiese
State of Vermont DEC
HMMD - SMS
103 S. Main St.
Waterbury, VT 05671-0404

Re: Subsurface Petroleum Contamination, Blouin Property, St. Albans, Vermont

Dear Mr. Spiese,

I am writing to advise you of the discovery of soil and ground water petroleum contamination in the vicinity of two abandoned underground gasoline storage tanks at the above-referenced site. Please find enclosed a copy of the Level II Environmental Site Assessment that Ground Water of Vermont completed at this site.

Since the report was written, the property has been acquired by the Northwestern Medical Center, located on Fairfield Street in St. Albans, Vermont. The site contact is now Mr. Peter Hofstetter, CEO of the Medical Center. The Medical Center is planning to remove the USTs as soon as possible.

Please call me at (802) 860-6065 if you have any questions or comments.

Sincerely,

Ron Miller
Hydrogeologist II and Regional Manager

cc. Mr. Peter Hofstetter, CEO, Northwestern Medical Center
Mr. Peter Cross, Cross Consulting Engineers

Enclosure: Level II Environmental Site Assessment, Blouin Property, St. Albans, VT
RWM:rwm 94052L01.SAM

→ Fairfield Street
St. Albans 05478
→ (802)-524-1041

Site # 94-~~1679~~
1710

SEP 1 1994

LEVEL II ENVIRONMENTAL SITE ASSESSMENT

BLOUIN PROPERTY

Fairfield Street
St. Albans, VT 05478

12 August 1994

Prepared for:

Northwestern Medical Center
Fairfield St.
St. Albans, VT 05478

Prepared by:

Ground Water of Vermont
1 Mill Street, Box C-5
Burlington, Vermont 05401
(802) 860-6065

GWW Project #V94-038

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EXECUTIVE SUMMARY

A Level II Environmental Site Assessment has been conducted at the Blouin Property located on Fairfield Street (Route 36) in St. Albans, Vermont. The assessment consisted of a review of historical and regulatory records pertaining to the site, and a subsurface investigation consisting of test pits, monitoring wells and soil borings. The investigation revealed the presence of soil and ground water contamination at the site, which was apparently caused by the historical operation of the site as a gasoline dispensing station. Although soil contaminant levels exceeded Vermont guideline standards, ground water contaminant levels were below Vermont standards, and it is considered unlikely that the VT DEC will require active remediation at the site.

The results of the historical and regulatory reviews confirmed that the property was formerly used as a gasoline service station. Two out-of-service petroleum underground storage tanks (USTs) were identified on the property. No hazardous waste sites were identified within one half-mile of the property.

The results of the test pits indicated that the site contains between zero and five feet of fill, with the deeper depths along the edge of an embankment on the property. The fill appeared to consist principally of sand and gravel, with minor amounts of concrete and bricks. Native soils encountered during the subsurface investigation consisted principally of glacial till, with some layers of silt and sand. Screening of soil samples collected from the test pits did not indicate the presence of volatile organic compounds.

The results of the soil boring and monitoring well installations indicated that petroleum compounds have been released to the subsurface in the vicinity of the USTs, and have impacted soils and ground water. The soil and ground water contamination appears to be limited in extent, however. Soils in the vicinity of the USTs were found to contain petroleum contamination above Vermont Department of Environmental Conservation (VT DEC) guideline levels. Ground water in the vicinity of the USTs was found to contain petroleum compounds at levels that are below Vermont drinking water standards and ground water enforcement standards. Ground water in the surficial aquifer was measured to be flowing toward the east, at an average gradient of 0.8%.

Ground Water of Vermont recommends that the apparent release to the subsurface of petroleum compounds be reported to the VT DEC, and that the prospective purchaser seek assurance from the VT DEC that the USTs will be covered under the Vermont Petroleum Cleanup Fund. In order to obtain coverage, the USTs will have to be registered with the VT DEC. The USTs should be permanently closed, in accordance with Vermont regulations pertaining to out-of-service petroleum USTs. UST closure costs (not including any soil excavation or disposal) are estimated to cost approximately \$6,000. The on-site drinking water well and a second drinking water well located to the south of the site across Fairfield Street should be sampled for gasoline compounds. Regardless of the testing results, if the property is purchased and the supply well is taken out of service, the on-site drinking water supply well will have to be properly abandoned in accordance with Vermont regulations.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this Level II Environmental Site Assessment is to determine if subsurface contamination is present at the site due to a spill or release of hazardous chemicals at the site, or at nearby properties. The assessment was initiated as a result of concerns related to the reported presence of significant quantities of fill on the property and the reported presence of two out-of-service underground storage tanks (USTs).

1.2 Report Authors and Client Contact

This report was prepared by the following employees at Ground Water of Vermont for the Northwestern Medical Center. Requests for information on the content of this document should be directed to these employees.

Ronald W. Miller **Hydrogeologist II and Regional Manager**

Parminder K. Grewal **Environmental Engineer**

The client contact for this report is Peter Hofstetter of the Northwestern Medical Center.

1.3 Date of Study

Authorization to proceed with the site assessment was received from the Northwestern Medical Center on 21 July 1994. Town records were reviewed on 26 July 1994. The grounds inspection and subsurface investigation was completed on 26 and 27 July 1994. Analytical data for ground water samples were received on 2 August 1994. This report is dated 12 August 1994.

1.4 Summary of Previous Environmental Site Assessments

No previous Environmental Site Assessment reports pertaining to the subject property were provided to Ground Water of Vermont (GWV) by the client. Additionally, no previous reports were found by GWV during the historical file research portion of this study.

2.0 SITE DESCRIPTION

2.1 Property Location and Ownership

The subject property is located in the Town of St. Albans, Vermont, and is described in the 1985 deed record to be "a parcel of land consisting of 1 1/4 acres more or less, together with the buildings thereon, located on the northerly side of Fairfield Street, and bounded substantially as follows: On the north by Kerbs Memorial Hospital, Inc. on the east by the thread or center of a brook; on the south by Fairfield street, and on the west by Crest Road." According to the Town Clerk's records, the property is currently owned by Samuel D. and Shirley Blouin. See Figure 1 in Appendix A for a site location map and Figure 2 for a site plan..

2.2 Site and Vicinity Characteristics

The site consists of a paved area along the southern boundary, and unpaved grassy areas covering most of the remainder of the site. A narrow wooded area is located between the overgrown grassy area and the wet area along the eastern boundary. Topography at the site generally slopes gradually southeastward toward a brook on an adjacent property. An embankment near the northeast corner of the site slopes downward to the north and east. The site is located at the nose of a topographic slope. To the west of the site, the land surface slopes moderately downward toward the southwest. Topography to the east of the site slopes slightly downward to the southeast until reaching the Stevens Brook. A wet area along the northeast boundary of the site drains eastward to the Stevens Brook.

The site is reportedly bounded to the west, north, and east by property owned by the Northwestern Medical Center. All of the adjacent properties across Fairfield Street to the south are residences. The ownership of these properties was not determined.

2.3 Buildings and Facilities

The only on-site buildings are a residence and a shed. According to Sanborn Fire Insurance Maps from 1959, there was formerly a store on the property. The location of this building is the same as the current on-site residence, but it is unknown if they are the same building.

Drinking water for the site is reportedly supplied by an on-site bedrock well, although a possible connection to the municipal water supply system was reported by Allan Robtoy, an employee of the Town of St. Albans. The site also reportedly has an in-ground septic system, which is reportedly located to the north of the on-site building. At least one other residence in the vicinity of the site, located on the south side of Fairfield Street, has a bedrock well. The Northwestern Medical Center is believed to be served by a municipal water supply and wastewater facility.

2.4 Grounds Inspection

A GWV employee conducted a visual inspection of the grounds on 26 and 27 July 1994. The visual inspection included the notation of surface signs of any potential environmental impact to the property, such as spills, staining, dumping, stressed or dead vegetation, areas of subsidence, points of discharge, and any visual evidence of disturbances to the ground surface.

A 3' x 15' concrete "island" was observed in the paved area south of the residence. Two fill pipes were also observed in this area, and two vent pipes were observed adjacent to the southeast corner of the building. The fill pipe located east of the island did not have a cap.

A pile of debris, approximately 10 feet by 20 feet in size, was observed in an area located approximately 30 feet east of the residence. The pile consisted of junk wood, concrete blocks, three tires, and three 55-gallon drums that contained household wastes. A circular area of black-stained soils, approximately five feet in diameter, was observed in the northern portion of the site. An area of absent vegetation was also observed in this area. Both areas were evaluated with test pits (described later in this report).

The shed was observed to contain several windows and several 55-gallon drums that appeared to be empty. Labels visible on some of the drums indicated that they originally contained motor oil.

The on-site residence was not inspected during the grounds inspection.

No other observations of potential environmental problems or concerns were noted.

3.0 SITE HISTORY

The following historical information sources were reviewed to ascertain the site history:

- Deed records on file at the St. Albans Town Clerk's Office;
- 1926 and 1959 Sanborn Fire Insurance Maps on file at the University of Vermont;
- 1871 Beers Atlas on file at the University of Vermont;
- 1962 Aerial Photographs on file at the Vermont State Geologist office;
- 1978 Orthophotographs on file at the Vermont State Geologist office;
- Interviews with the current site owner and others knowledgeable about the site history.

The table below shows the historical ownership of the subject property.

DATE OF OWNERSHIP	OWNER
January 1985 to Present	Samuel and Shirley Blouin
August 1953 to January 1985	Samuel D. Blouin
8 August 1953 to 10 August 1953	Benjamin Cohen
February 1929 to August 1953	Cyprien Blouin

Historical maps and deed records indicate that the site remained an undeveloped part of a 150 acre farm until some time between 1926 and 1953. A 1953 deed record describes the site as the "Cyprien Blouin Filling Station". The current parcel was split from the larger parcel in 1953. According to the St. Albans Town Clerk, a store and gasoline station were present on the property until the early 1950s. According to Shirley Blouin, the gasoline station and store ceased operation in approximately 1954.

From 1954 until approximately 1991, the Blouins lived in the on-site residence. During that time, portions of the property were reportedly filled, and the northern portion of the property were reportedly used for the storage of excavating equipment. The 1962 aerial photograph shows the on-site residence, but the map scale is too small to permit identification of other site features. The 1978 orthophotograph of the site shows the on-site building and what appears to be a large vehicle or trailer in the northern portion of the property. An access off Crest Road onto the subject property is also visible. Town records indicate that the on-site drilled well is 386 feet deep, and was installed in 1978 to replace a shallow on-premises well.

From 1991 to the present, the property has reportedly been used as a residential rental property.

On 27 July 1994, Mrs. Blouin stated that one 500-gallon and one 1,000-gallon UST are present on the property, and that both formerly contained gasoline. Mrs. Blouin stated that she did not believe that the 500-gallon UST had been used after the gasoline station closed, but that the 1,000-gallon UST was used to store gasoline for the excavating equipment during this period. She also stated that she had no knowledge that either of the USTs had ever leaked. Mrs. Blouin reported that both USTs had been pumped out approximately five years ago.

4.0 REGULATORY INFORMATION

4.1 Information Sources

On 3 August 1994, GWV reviewed information on file with the Vermont Department of Environmental Conservation (VT DEC) Hazardous Waste and Underground Storage Tank Sections on August 3, 1994. The information reviewed included the Vermont Hazardous Waste Sites List, the EPA CERCLIS Hazardous Waste Sites List (which includes the EPA Superfund site list), the VT DEC Leaking Underground Storage Tank List, the VT DEC Registered Underground Storage Tank List, and the EPA List of RCRA Hazardous Waste Generators.

4.2 Results of the Regulatory Review

The site was not listed in any of the reviewed documents. The on-site USTs were not located on the list of USTs registered with the State.

UST registration records indicated that two petroleum USTs, installed in 1990, are located approximately 500 feet north of the site, at the Northwestern Medical Center. A 550 gallon UST contains diesel used for generators, and a 10,000 gallon UST stores #4 fuel oil used in the boiler to heat the hospital facilities. Both USTs and ancillary piping systems are reportedly of double-walled construction, with electronic interstitial and in-tank monitoring. These USTs replaced four previous USTs at the hospital, three of which were removed and one of which was closed in-place. According to the Vermont Department of Environmental Conservation Tank Pull Form, low levels of soil contamination were present at the time of the UST removal. The State official completing the UST closure form rated the site priority as "L/CL", which presumably stands for "Low/Close (Site)".

No other registered USTs, RCRA generators, or hazardous waste sites were identified within one-half mile of the property.

site # ?

5.0 SUBSURFACE INVESTIGATION

5.1 Underground Storage Tanks

On 26 July 1994, the area surrounding each fill pipe was surveyed with a magnetic locator. The results of the magnetic survey suggested the presence of two underground storage tanks (USTs), both oriented east-west. One UST apparently located to the east of the island appeared to be approximately 10 feet long. A second UST, located to the west of the island, appeared to be approximately 5 feet long. The UST diameters were measured by inserting a measuring tape into each fill pipe, and subtracting the depth to the bottom of the fill pipe from the total depth. Both USTs appeared to be four feet in diameter. These measurements appear to confirm reports that the western UST is of 550 gallon capacity, and the eastern UST is of 1,000-gallon capacity.

Depth to water was measured in each UST with a water-level indicator. The 550-gallon UST contained 3.0 feet of water, and the 1,000-gallon UST contained 3.75 feet of water. The water in both USTs appears to have a gasoline-like odor. Comparison of these measurements with standard UST charts suggest that the smaller UST contains approximately 450 gallons of liquid, and that the larger UST contains approximately 975 gallons of liquid. It is likely that the liquid in both USTs is contaminated with gasoline compounds, and that both USTs contain some sludge or "bottoms".

5.2 Test Pits

Nine test pits were excavated at the site on 26 July 1994. The objective of performing the test pits was to assess the nature and amount of fill used at the property, and to determine whether the fill might contain volatile organic compounds. The test pits ranged in depth from 4 feet to 8 feet below ground surface. Test pits near the shed encountered between two and three feet of sand and gravel fill, with minor amounts of concrete and brick. Two test pits excavated near the top of the embankment encountered approximately three feet of sand and gravel fill at the south end of each pit, increasing to five feet along the edge of the embankment. Test pits in other areas encountered only minor thicknesses of sand and gravel fill. Native soils under the fill material generally consisted of silty glacial till.

Soils in each test pit were sampled and screened in the field for the presence of volatile organic compounds (VOCs) using a Photovac Tip II photoionization device (PID), which was calibrated in the field using isobutylene to a benzene reference. Test pit screening results are presented in Table 3. PID responses were within the range expected from naturally occurring compounds, and were not considered to indicate the presence of VOCs.

Test pit TP2 was excavated in an area of absent vegetation at the site. The test pit did not indicate the presence of any soil contaminants. A shallow test pit (not numbered) was excavated in an area of surface soil staining between TP1 and TP2. The test pit indicated that the stained soil was only present in the top one inch of soil, and thus is not considered to represent a significant potential liability.

5.3 Soil Boring and Monitoring Well Installation

Two soil borings and four soil boring/temporary monitoring wells were installed at the site on 27 July 1994. Boring locations are shown in Figure 3 in Appendix A. Boring logs and well construction details are included in Appendix B. The objective of the borings and well installations was to determine whether soils and ground water in the vicinity of the USTs have been impacted by petroleum compounds.

The borings were advanced to depths of between 9 feet and 10 feet below ground surface by using a combination of vibratory and solid-stem auger techniques. The monitoring wells installed are temporary and can easily be removed. The wells are constructed of four to five feet of 1.5 inch diameter PVC riser and five feet of 0.006-inch slot screen. The annular space around each monitoring well was backfilled with filter sand to a depth of approximately 1.5 feet below ground surface, followed by bentonite to approximately one foot below grade. Each well is capped with a slip-on PVC plug located approximately three to six inches below grade.

Each well was developed using a peristaltic pump immediately after being installed. Well recharge was slow in monitoring wells MW1 and MW2, and extremely slow in MW3 and MW4.

5.4 Soil Sampling and Analysis

During the soil boring and monitoring well installation, soil samples from each boring location were collected using a vibratory core sampler, and field screened using a PID. PID screening results are presented in Table 4.

PID responses varied from 0.2 ppm to 576 ppm. PID readings in the two monitoring wells located downgradient of the USTs (MW1 and MW2) did not exceed 0.6 parts per million (ppm). PID readings increased with depth in monitoring well MW3, located approximately 15 feet north of the 1,000-gallon UST, with the highest reading of 576 ppm in the 7.5 - to - 10-foot sample. PID readings in soil boring SB1, located south of the 1,000-gallon UST ranged from 39.9 to 79.2 ppm, with the highest reading at the 7-9-foot interval.

The VT DEC has established guideline standards for petroleum-contaminated soils. Soils containing gasoline compounds at less than 20 parts per million (ppm) are considered to be acceptable for backfill except in sensitive areas. Soils containing PID readings above 20 ppm are considered on a case-by-case basis.

5.5 Ground Water Sampling and Analysis

Ground water samples were collected from the monitoring wells immediately after development. The water samples were preserved and transported in ice-filled coolers under proper chain-of-custody to the analytical laboratory, where they were tested for the volatile petroleum compounds benzene, toluene, ethylbenzene, and xylenes (collectively termed BTEX) and the gasoline additive methyl-tert butyl-ether (MTBE) by EPA Method 8260. GWV collected a trip blank to verify proper quality assurance and control.

The results of the analytical testing are summarized in Table 2 of Appendix A, and are discussed below. Laboratory report forms are presented in Appendix C.

- BTEX compounds were detected in all of the monitoring well samples. The highest BTEX concentrations were detected in MW3, located north of the 1,000-gallon UST. No BTEX compounds were detected above Vermont drinking water standards or Vermont ground water enforcement standards.
- Benzene, considered the most toxic of the BTEX compounds, was not detected in any of the monitoring well samples.
- MTBE was detected at a concentration of 5 parts per billion (ppb) in one monitoring well. The Vermont ground water enforcement standard for MTBE is 40 ppb.
- No BTEX compounds or MTBE were detected in the trip blank sample.

5.6 Ground Water Flow Direction and Gradient

On 27 July 1994, the monitoring wells, soil borings, test pits, and relevant site features were surveyed in azimuth and relative elevation. On 4 August 1994, a GWV representative measured the depth to water in the monitoring wells. Relative water table elevations were calculated by subtracting the measured depth to water in each well from the relative top-of-casing elevation. Ground water elevation calculations are summarized in Table 1. A ground water contour map (Figure 3) was prepared for the site using this information.

As shown on the ground water contour map, ground water in the vicinity of the monitoring wells was measured to be flowing toward the southeast, at a gradient of approximately 0.8%.

6.0 CONCLUSIONS

On the basis of the above described assessment, Ground Water of Vermont has concluded the following:

1. Two underground storage tanks (USTs) were identified at the site. The USTs appear to have been used for the retail sale of gasoline at the site, and have apparently been in place for at least forty years. The USTs currently appear to be filled with water, which is probably contaminated by gasoline compounds.
2. There has been a release or releases of petroleum to the subsurface at the site, which appears to have been caused by the activities associated with operating a gasoline dispensing facility.
3. The release(s) are probably not continuing, as suggested by the facts that both USTs appear to be filled with water, and that the contaminant patterns do not exhibit characteristics similar to recent release(s) of gasoline.
4. Soils in the immediate vicinity of the USTs have been impacted by the release(s). PID readings on soil samples from six soil borings in the vicinity of the USTs ranged from less than 1 ppm to 576 ppm. Several soil samples exceeded the Vermont guideline soil standard of 20 ppm for gasoline-contaminated soils.
5. Ground water in the surficial aquifer in the vicinity of the USTs has also been impacted by the release(s). Petroleum compound levels were highest in a monitoring well located adjacent to the 1,000-gallon UST. Petroleum compound levels in all of the ground water samples were below Vermont drinking water standards and Vermont ground water enforcement standards.
6. The extent of the soil and ground water contamination at the site is likely to be limited, and does not appear to pose a significant threat to any nearby off-site receptors. The close proximity of the on-site drinking water well, however, represents a potential pathway for contaminant migration into the underlying bedrock aquifer.
7. It is considered unlikely that the VT DEC will require active remediation of soil or ground water contamination at the site. However, the presence of soil contamination at levels above Vermont guideline levels suggests that the VT DEC may require installation and monitoring of permanent ground water monitoring wells at the site.
8. Soils at the site consisted of zero to five feet of sand and gravel fill, underlain by native silty glacial till soils.
9. Ground water in the immediate vicinity of the monitoring wells was 7.5 to 8 feet below grade and was flowing east-southeast at a gradient of approximately 1.4%. Ground water flow rates through the dense glacial till soils are estimated to be extremely slow.

10. The fill materials encountered in the nine test pits excavated at the site contained minor amounts of concrete and bricks, but did not appear to contain oils or hazardous substances, or pose significant environmental liabilities.
11. The results of the regulatory historical reviews did not reveal the existence of other potential environmental liabilities at the site or on nearby properties.

7.0 RECOMMENDATIONS

On the basis of the above-described conclusions, GWV makes the following recommendations:

1. The VT DEC should be notified of the findings of this investigation.
2. The on-site drinking water well and the well located on the south side of Fairfield Street directly across from the site should be sampled and analyzed for gasoline compounds. If gasoline compounds are identified in these wells, any other wells that may be at risk should be sampled.
3. Regardless of the testing results, Vermont regulations require that the on-site supply well must be properly abandoned if it is not going to be used as a water supply source.
4. Although the results of this investigation suggest that it is unlikely that the VT DEC will require active remediation at the site, it is possible that permanent monitoring wells will have to be installed at the site, and ground water quality monitored for an extended period of time. Therefore, a determination from the VT DEC of the eligibility of the USTs at the site to participate in the Vermont Petroleum Cleanup Fund should be requested before the prospective purchaser commits to acquiring the site. If the site is considered to be eligible, the future liability for investigation and remediation related to the USTs may be limited to \$10,000.
5. The USTs should be registered with the VT DEC, then closed in accordance with Vermont regulations. Because soil and ground water contamination is likely to be encountered, all on-site contractors should have current OSHA hazardous material training. The tasks involved in this UST closure should include the following:
 - Sampling and laboratory analysis of the UST contents for benzene, lead, and flashpoint to determine the most cost-effective disposal method;
 - Notifying the VT DEC Management and Prevention Section of the proposed closure date at least 15 days in advance;
 - Extraction (with a "vac" truck), transport, and disposal of the UST liquids;
 - Purging of the USTs prior to removal to prevent the presence of a hazardous atmosphere;
 - Cleaning of the USTs, either in-place or following removal;
 - Containment of all sludge and scale ("tank bottoms") removed during cleaning, and transport and disposal as hazardous waste by a certified hazardous waste transporter;
 - Excavation of the USTs;
 - Assessment of the UST condition, and evaluation of any soil or ground water contamination encountered by a qualified consultant;

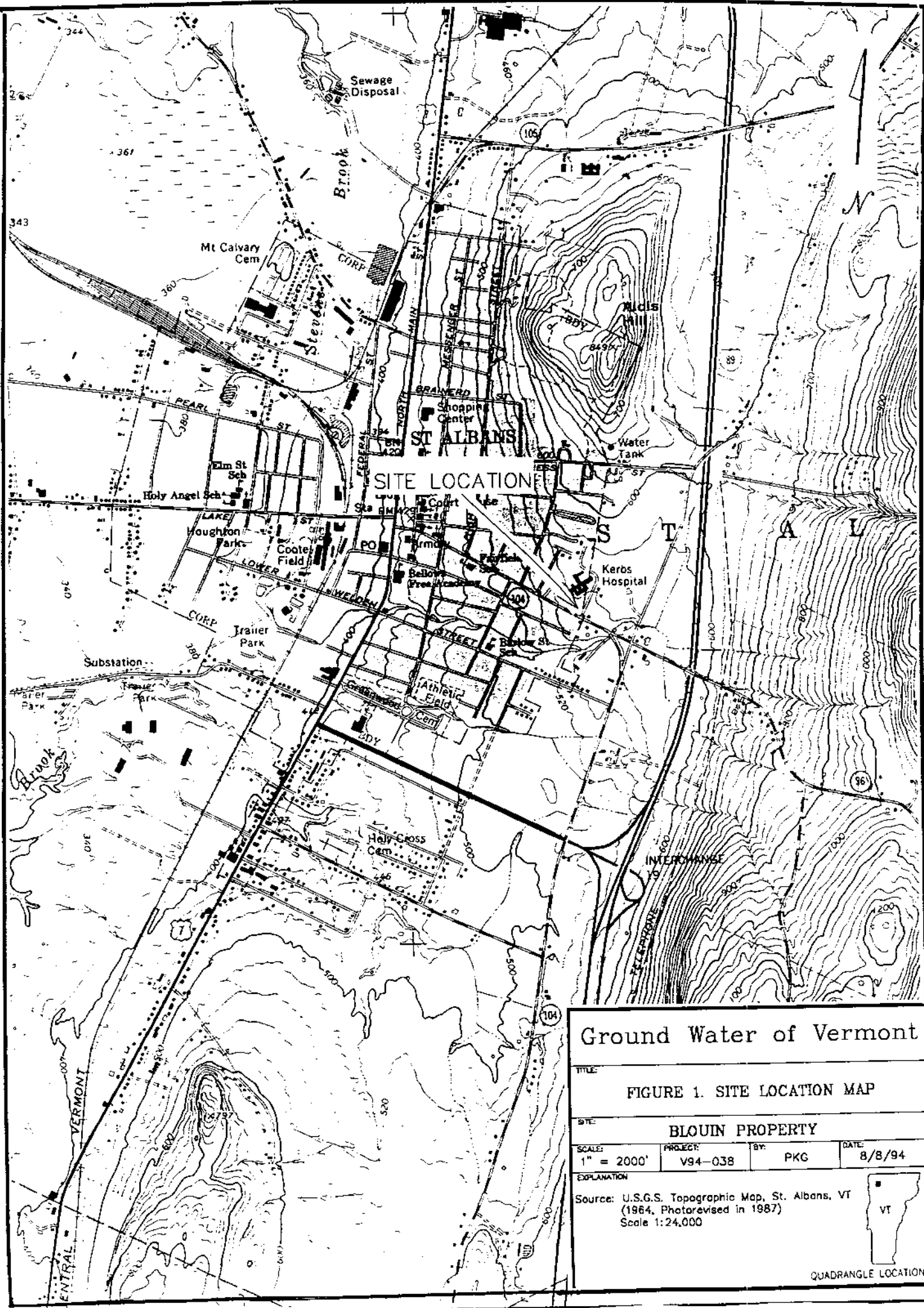
- (Optionally) Excavation and stockpiling or off-site disposal of the most contaminated soils (Note: approval for off-site transport of any contaminated soils must be obtained in advance from the VT DEC);
- Backfilling the excavation;
- Completion of the Vermont tank pull forms, and additional investigation or monitoring if required by the VT DEC.

Closure of the two USTs at the site is estimated to cost approximately \$6,000. Actual costs may be lower if analytical results on the water contained in the USTs indicate that it does not have to be handled as hazardous waste. This cost estimate includes all of the steps outlined above, except the optional excavation and disposal of contaminated soils. The most cost-effective methods of off-site soil disposal of gasoline-contaminated soil are polyencapsulation and asphalt batching.

Polyencapsulation consists of encapsulating a soil stockpile in polyethylene sheeting. Polyencapsulation can often be performed for relatively small cost, but requires an appropriate location, creates potential liability of contamination of the stockpile location if the encapsulation fails, and must be monitored for an extended period of time. Total costs for polyencapsulation typically range from \$35 to \$50 per ton.

Asphalt batching consists of transporting soils to an approved asphalt plant, where the soils are recycled into asphalt. Asphalt batching offers the advantages of no long-term liability (the contamination is destroyed) and relatively low cost. Extensive analytical testing must be performed before the soils can be accepted, however, so this option is often not cost-effective for small (<30 tons) of soil. Total costs for asphalt batching costs commonly range from \$45 to \$60 per ton.

APPENDIX A
FIGURES AND TABLES



Ground Water of Vermont

FIGURE 1. SITE LOCATION MAP

SITE: **BLOUIN PROPERTY**

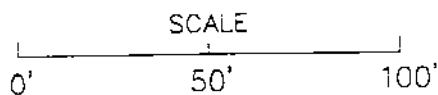
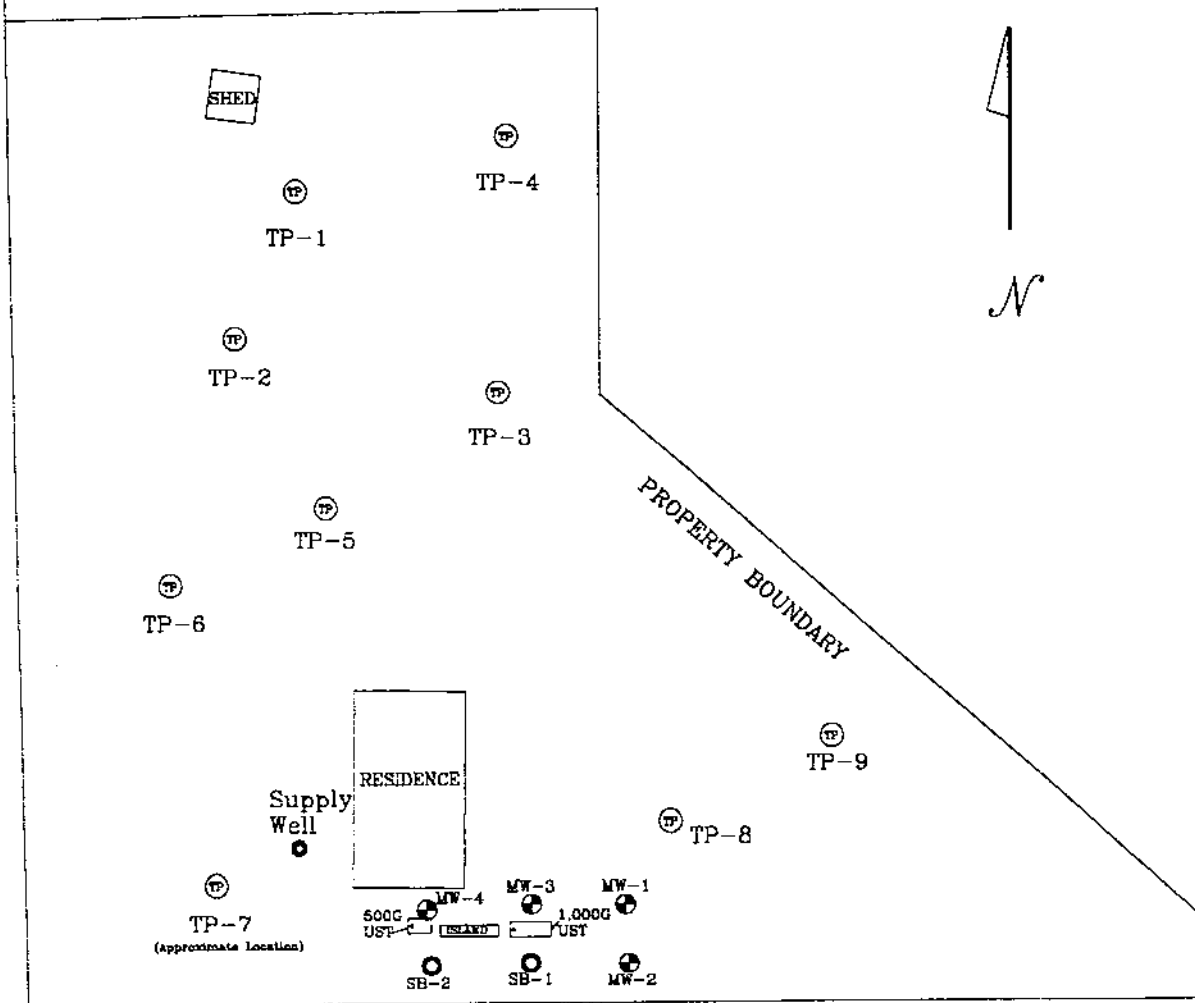
SCALE: 1" = 2000' PROJECT: V94-038 BY: PKG DATE: 8/8/94

EXPLANATION

Source: U.S.G.S. Topographic Map, St. Albans, VT
(1964, Photorevised in 1987)
Scale 1:24,000



QUADRANGLE LOCATION



Ground Water of Vermont

TITLE:

FIGURE 2. SITE MAP

SITE:

BLOUIN PROPERTY, ST. ALBANS

SCALE:

1"=50'

PROJECT:

V94-038

BY:

PKG

DATE:

8/14/94

EXPLANATION

- ⊕ MONITORING WELL
- SOIL BORING
- ⊙ TEST PIT

CREST ROAD

SHED

TP-4

TP-1

TP-2

TP-3

TP-5

TP-6

PROPERTY BOUNDARY



Supply Well

RESIDENCE

TP-7
(Approximate Location)

500G
UST

15,000G
UST

MW-4

MW-3

MW-1

MW-2

SB-2

SB-1

TP-8

TP-9

FAIRFIELD STREET

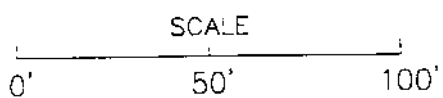
GROUND WATER FLOW DIRECTION

92.0'

91.9'

91.8'

91.7'



Ground Water of Vermont

TITLE:
FIGURE 3. GROUND WATER CONTOUR MAP

SITE:
BLOUIN PROPERTY, ST. ALBANS

SCALE: 1"=50'	PROJECT: V94-038	BY: PKG	DATE: 8/14/94
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EXPLANATION

- ⊕ MONITORING WELL
- SOIL BORING
- ⊙ TEST PIT
- 92.0' GROUND WATER ELEVATION CONTOUR LINE

TABLE 1. GROUND WATER ELEVATION CALCULATIONS

**Blouin Property
St. Albans, Vermont**

Monitoring Date: 27 July 1994

Well I.D.	Well Depth	Top	Depth To	Water Table
		of Casing Elevation		
MW-1	10'	99.39	7.70	91.69
MW-2	9.5'	99.12	7.48	91.64
MW-3	9'	99.65	7.79	91.86
MW-4	9'	100.00	8.01	91.99

All values reported in feet, arbitrary datum

TABLE 2. GROUND WATER ANALYTICAL RESULTS

**Blouin Property
St. Albans, Vermont**

Monitoring Date: 27 July 1994

Station	Date	Benzene	Toluene	Ethyl benzene	Xylenes	Total BTEX	MTBE
MW-1	07/27/94	BPQL<1	1	BPQL<1	BPQL<3	1	BPQL<1
MW-2	07/27/94	BPQL<1	3	1	8	12	5
MW-3	07/27/94	BPQL<1	425	125	381	931	BPQL<1
MW-4	07/27/94	BPQL<1	6	BPQL<1	3	9	BPQL<1
TRIP BLANK	07/27/94	BPQL<1	BPQL<1	BPQL<1	BPQL<3	BPQL	BPQL<1
VT DRINKING WATER STD.	--	5	1,000	700	10,000	--	40
VT GROUND WATER ENFORCEMENT STANDARD	--	5	2,420	680	400	--	40

Notes BTEX and MTBE Reported in Parts Per Billion (ppb)
BPQL <1 = Below Practical Quantitation Limit of 1 ppb

TABLE 3. TEST PIT SCREENING RESULTS
Blouin Property
St. Albans, Vermont

LOCATION	DEPTH (FEET)	PID READING (PPM)	LOCATION	DEPTH (FEET)	PID READING (PPM)
TP 1			TP 7		
S1	1.5-2	2.1	S1	0-1	0.4
S2	2-2.5	1.8	S2	2.5-3	0.3
S3	2.5-3	1.3	S3	3-4	0.4
S4	3-4	1.0	S4	5-6	0.2
S5	6.5-7	0.4	TP 8		
TP 2			S1	0-1	0.2
S1	1.5-2	0.8	S2	1-2	0.2
S2	4	0.5	S3	2-3	0.2
TP 3			S4	3-4	0.1
S1	0-1	0.7	S5	4-6	0.2
S2	1-2.8	0.7	TP 9		
S3	2.8-3	1.5	S1	0-2	0.2
S4	3-3.5	1.5	S2	2-4	0.2
S5	3.5-4	1.3	S3	4-6	0.1
S6	5-6	1.3	S4	6-8	0.1
TP 4					
S1	0-1.5	0.7			
S2	2.5-3	0.9			
S3	5-6	0.9			
TP 5					
S1	0-2	0.8			
S2	2-3	0.6			
S3	3-3.5	0.6			
S4	5-6	0.6			
TP 6					
S1	0-1	0.6			
S2	1-3	1.0			
S3	3-4	0.6			

TABLE 4. SOIL BORING SCREENING RESULTS
Blouin Property
St. Albans, Vermont

LOCATION	DEPTH (FEET)	PID READING (PPM)	LOCATION	DEPTH (FEET)	PID READING (PPM)
MW 1					
S1A	1-3'	0.2			
S1B	3-5'	0.5			
S2A	5-7.5'	0.5			
S2B	7.5-10'	0.5			
MW 2					
S1A	1-3'	0.6			
S1B	3-5'	0.6			
S2	5-6.5'	0.6			
MW 3					
S1A	1-3'	2.4			
S1B	3-5'	15.3			
S2A	5-7.5'	518.			
S2B	7.5-9.8'	576.			
B1					
S1A	1-3'	39.9			
S1B	3-5'	39.9			
S2A	5-7'	34.2			
S2B	7-9'	79.2			
MW4					
S1A	1-3'	1.8			
S1B	3-5'	2.1			
S2A	3-5'	2.3			
S2B	7-9'	73.6			
B2					
S1A	1-3'	1.0			
S1B	3.5-6'	0.3			
S2	6-9'	0.6			

APPENDIX B

SOIL BORING AND TEST PIT LOGS



Ground Water of Vermont

TEST PIT LOG

Test Pit #: TP-1

Excavator:

Andy Leduc Excavating

Date: 7/26/94

Test Pit Logged By:

Ron Miller

Job #: Y94-038

Water Table At:

3'

Location: Blowin Property, St. Albans

Samples At:

Depth (ft)	Description
0	Brown sand & gravel fill, with boulders
1	
2	
3	▼ Gray mottled silt, wet, no odors
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	

Notes:



Ground Water of Vermont

TEST PIT LOG

Test Pit #: TP-2

Excavator: Andy Leduc Excavating

Date: 7/26/94

Test Pit Logged By: Ron Miller

Job #: V94-038

Water Table At: _____

Location: Blavin Property, St. Albans

Samples At: _____

Depth (ft)	Description
0	Brown sand & gravel fill, dry, no odor, trace bricks
1	
2	
3	Yellow-Brown silt with mottles, moist, no odors
4	
5	
6	Bottom
7	
8	
9	
10	
11	
12	
13	
14	

Notes:



Ground Water of Vermont

TEST PIT LOG

Test Pit #: TP-3

Excavator:

Andy Leduc Excavating

Date: 7/26/94

Test Pit Logged By:

Ron Miller

Job #: V94-038

Water Table At:

~2.75'

Location: Blewin Property, St. Albans

Samples At:

Depth (ft)	Description
0	
1	Brown sand & gravel fill, dry no odors
2	Dark gray silt loam, moist, no odors
3	Medium gray sandy till, moist, no odors
4	Yellow-brown silt with mottles, wet, no odors
5	
6	
7	Yellow-brown sandy till, wet, no odors
8	Bottom
9	
10	
11	
12	
13	
14	

Notes:



Ground Water of Vermont

TEST PIT LOG

Test Pit #: TP-4

Excavator:

Andy Leduc Excavating

Date: 7/26/94

Test Pit Logged By:

Ron Miller

Job #: V94-038

Water Table At:

3'

Location: Blowin Property, St. Albans

Samples At:

Depth (ft)	Description
0	
1	Brown topsoil, dry, no odors
2	Brown / gray till, moist, no odors, mottles
3	▼
4	Yellow-brown till, silty, wet, no odors
5	
6	
7	
8	Bottom
9	
10	
11	
12	
13	
14	

Notes:



Ground Water of Vermont

TEST PIT LOG

Test Pit #: TP-5

Excavator: Andy Leduc Excavating

Date: 7/26/94

Test Pit Logged By: Ron Miller

Job #: V94-039

Water Table At: 3'

Location: Blawie Property, St. Albans

Samples At: _____

Depth (ft)	Description
0	
1	Brown sand, trace gravel, dry, no odors
2	
3	Yellow-brown silty till, wet at 3'
4	
5	
6	Brown sand, trace gravel, wet, no odor
7	
8	Bottom
9	
10	
11	
12	
13	
14	

Notes:



Ground Water of Vermont

TEST PIT LOG

Test Pit #: TP-6

Excavator: Andy Leduc Excavating

Date: 7/26/94

Test Pit Logged By: Ron Miller

Job #: V94-038

Water Table At: 3'

Location: Blavin Property, St. Albans

Samples At: _____

Depth (ft)	Description
0	
1	Brown sandy top soil - dry, no odors
2	
3	Yellow-brown sandy fill, moist, no odor
4	Yellow-brown silty fill, wet, no odor
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	

Notes:



Ground Water of Vermont

TEST PIT LOG

Test Pit #: TP-7

Excavator:

Andy Leduc Excavating

Date: 7/26/94

Test Pit Logged By:

Ron Miller

Job #: V94-038

Water Table At:

7'

Location: Blair Property, St. Albans

Samples At:

Depth (ft)	Description
0	
1	Cindery fill
2	Brown sand
3	Yellow-brown silty fill
4	
5	
6	
7	Bottom $\frac{1}{2}$ wet
8	
9	
10	
11	
12	
13	
14	

Notes:



Ground Water of Vermont

TEST PIT LOG

Test Pit #: TP-8

Excavator:

Andy Ledwo Excavating

Date: 7/26/94

Test Pit Logged By:

Ron Miller

Job #: V94-038

Water Table At:

7'

Location: Blowin Property, St. Albans

Samples At:

Depth (ft)	Description
0	
1	Brown sand & gravel fill, roots, one piece of metal pipe, dry, no odor Note: south side of pit - fill ends @ 3' (obvious line of former dark gray top soil, sloping toward north)
2	
3	
4	
5	Dark gray sandy topsoil, dry, no odor
6	Yellow-brown silty till, moist, no odor
7	
8	Yellow-brown silty till, wet, no odor
9	
10	
11	
12	
13	
14	

Bottom

Notes:



Ground Water of Vermont

TEST PIT LOG

Test Pit #: TP-9

Excavator:

Andy Leduc Excavating

Date: 7/26/94

Test Pit Logged By:

Ron Miller

Job #: V94-038

Water Table At:

NOT ENCOUNTERED

Location: Blouin Property, St. Albans

Samples At:

Depth (ft)	Description
0	
1	Dark brown sand & gravel fill, trace bricks, roots
2	
3	
4	
5	
6	Yellow-brown silty fill, dry, no odor
7	
8	
9	
10	
11	
12	
13	
14	

Bottom

Notes:

ADAMS ENGINEERING
Gerard Adams
RD #1, Box #3700, Underhill, Vt. 05489
899-4945
Fed ID 03-0296943

July 29, 1994

Mr. Ron Miller
Ground Water of Vt.

Invoice for wells & borings adjacent to the St. Albans Hospital: (as quoted)

7/27/94 Drilling: 4 wells \$100 ea.	\$400
Two borings \$55/ea.	\$110
Mob/Demob \$100	\$100
Total	\$610

Boring log for property adjacent to St. Albans hospital conducted under your direction:
7/27/94 Soils sampled with 5' X 2.375" ID-NQ casing with polyethylene liner vibrated to depth and retrieved liner with sample removed for examination. Wells of 1.5" PVC, screened with 5' X 1.5" X .006" Hi Flow screen placed in open sampler hole, backfilled with .49 mm pool filter sand, and bentonite slurry placed to -1' +/- . Wells completed to below grade without protective covers. Wells developed with peristaltic pump using dedicated polyethylene tube with foot valve-sample taken by draining suction tube. Very poor recovery in all wells particularly MW 4 & 5. Solid auger used to drill to -1' to penetrate black top.

MW #1, North extreme east.

SOILS WELL

-1 > 5.2' Black cinders //(over)brown silty sand & stones becoming denser.
-.2' Top of well 5' X 1.5" solid riser.
-1' Top bentonite slurry.
-2.5' Bottom of bentonite top sand placed in open sampler hole.
-5.2 > 9.6' Refusal brown silt//silty sand & stones saturated zone.
-5.0' Top well screen 5' X 1.5" X .006" slot Hi Flo, 8TPI, typ.
-10' Bottom well screen.

MW #2 South extreme east.

-1 > 5.0' Brown silty sand & stones saturated at tip.
-.2' Top of well.
-1' Top bentonite slurry.
-2.5' Bottom of bentonite top sand placed in open sampler hole.
-5.0 > 10.2' Brown silt//silty sand & stones saturated zone.
-4.5' Top well screen 5' .
-9.5' Bottom well screen.

MW 3 North midway east & west.

-1 > 5.0' Brown silty sand & stones, gray zone in middle.
-.2' Top of well.

-1' Top bentonite slurry.
-1.6' Bottom of bentonite top sand placed in open sampler hole.
-5.0 > 9.8' Brown/gray silty sand.
-4.0' Top well screen 5' .
-9' Bottom well screen. Was pulled from B-1.
B-1 South midway east & west.
-1 > 5.0' Brown silty sand & stones becoming denser.
-5.0 > 10.1' Brown silt//silty sand & stones//saturated gray fine gravel at tip.
Filled to -3' with bentonite.
MW #4 North west..
-1 > 5.0' Brown silty sand & stones becoming denser.
-.2' Top of well.
-1' Top bentonite slurry.
-2.5' Bottom of bentonite top sand placed in open sampler hole.
-5.0 > 10.2' Brown silt//silty sand & stones small saturated zone.
-4.0' Top well screen 5' .
-9' Bottom well screen.
B-2 South west, was MW 4
-1 > 3.1' Refusal, Brown silty sand & stones.
-3.1 > 3.6' Auger through stones.
-3.6 > 6.2' Refusal brown silty sand & stones.
-6.2 > 9' Augered, refusal to improve recovery, too little water well pulled.

Sincerely,


G. Adams



LABORATORY ANALYSIS

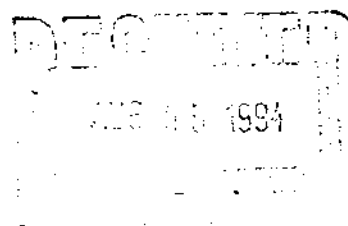
CLIENT NAME:	Groundwater of Vermont	REF #:	9418
ADDRESS:	One Mill Street Box C-5 Burlington, VT 05401	PROJECT NO.:	V94-038
SAMPLE LOCATION:	Blouin Property	DATE OF SAMPLE:	7/27/94
SAMPLER:	Ron Miller	DATE OF RECEIPT:	7/29/94
		DATE OF ANALYSIS:	7/30,7/31,8/2/94
ATTENTION:	Ron Miller	DATE OF REPORT:	8/2/94

Pertaining to the analyses of specimens submitted under the accompanying chain of custody form, please note the following:

- Water samples submitted for VOC analysis were preserved with HCl.
- Specimens were processed and examined according to the procedures outlined in the specified method.
- Holding times were honored.
- Instruments were appropriately tuned and calibrations were checked with the frequencies required in the specified method.
- Blank contamination was not observed at levels interfering with the analytical results.
- Continuing calibration standards were monitored at intervals indicated in the specified method. The resulting analytical precision and accuracy were determined to be within method QA/QC acceptance limits.
- The efficiency of analyte recovery for individual samples was monitored by the addition of surrogate analytes to all samples, standards, and blanks. Surrogate recoveries were found to be within laboratory QA/QC acceptance limits, unless noted otherwise.

Reviewed by:

Brendan McMahon, Ph.D.
Director, Chemical Services





LABORATORY REPORT

EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF. #:	9,418
REPORT DATE:	August 2, 1994	STATION:	MW-1
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	10:20
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	August 2, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	BPQL
Toluene	1	1
Ethylbenzene	1	BPQL
m+p-Xylene	2	BPQL
o-Xylene	1	BPQL
Chlorobenzene	1	BPQL
1,2-Dichlorobenzene	1	BPQL
1,3-Dichlorobenzene	1	BPQL
1,4-Dichlorobenzene	1	BPQL
MTBE	1	BPQL

Surrogate % Recovery: 101%

BPQL = Below Practical Quantitation Limit (PQL).



LABORATORY REPORT

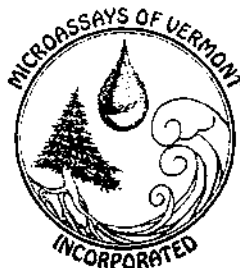
EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF.#:	9,418
REPORT DATE:	August 2, 1994	STATION:	MW-1
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	10:20
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	August 2, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	BPQL
Toluene	1	1
Ethylbenzene	1	BPQL
m+p-Xylene	2	BPQL
o-Xylene	1	BPQL
Chlorobenzene	1	BPQL
1,2-Dichlorobenzene	1	BPQL
1,3-Dichlorobenzene	1	BPQL
1,4-Dichlorobenzene	1	BPQL
MTBE	1	BPQL

Surrogate % Recovery: 101%

BPQL = Below Practical Quantitation Limit (PQL).



LABORATORY REPORT

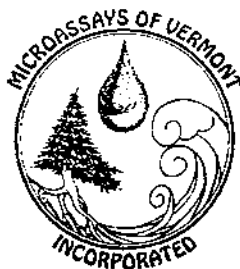
EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF.#:	9,418
REPORT DATE:	August 2, 1994	STATION:	MW-2
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	13:05
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	July 30, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	BPQL
Toluene	1	3
Ethylbenzene	1	1
m+p-Xylene	2	6
o-Xylene	1	2
Chlorobenzene	1	BPQL
1,2-Dichlorobenzene	1	BPQL
1,3-Dichlorobenzene	1	BPQL
1,4-Dichlorobenzene	1	BPQL
MTBE	1	5

Surrogate % Recovery: 101%

BPQL = Below Practical Quantitation Limit (PQL).



LABORATORY REPORT

EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF.#:	9,418
REPORT DATE:	August 2, 1994	STATION:	MW-2
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	13:05
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	July 30, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	BPQL
Toluene	1	3
Ethylbenzene	1	1
m+p-Xylene	2	6
o-Xylene	1	2
Chlorobenzene	1	BPQL
1,2-Dichlorobenzene	1	BPQL
1,3-Dichlorobenzene	1	BPQL
1,4-Dichlorobenzene	1	BPQL
MTBE	1	5

Surrogate % Recovery: 101%

BPQL = Below Practical Quantitation Limit (PQL).



LABORATORY REPORT

EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF.#:	9,418
REPORT DATE:	August 2, 1994	STATION:	MW-3
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	14:35
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	July 31, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	50	425
Toluene	50	125
Ethylbenzene	50	419
m+p-Xylene	100	381
o-Xylene	50	BPQL
Chlorobenzene	50	BPQL
1,2-Dichlorobenzene	50	BPQL
1,3-Dichlorobenzene	50	BPQL
1,4-Dichlorobenzene	50	BPQL
MTBE	50	BPQL

Surrogate % Recovery: 102%

BPQL = Below Practical Quantitation Limit (PQL).



LABORATORY REPORT

EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF.#:	9,418
REPORT DATE:	August 2, 1994	STATION:	MW-3
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	14:35
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	July 31, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	50	425
Toluene	50	125
Ethylbenzene	50	419
m+p-Xylene	100	381
o-Xylene	50	BPQL
Chlorobenzene	50	BPQL
1,2-Dichlorobenzene	50	BPQL
1,3-Dichlorobenzene	50	BPQL
1,4-Dichlorobenzene	50	BPQL
MTBE	50	BPQL

Surrogate % Recovery: 102%

BPQL = Below Practical Quantitation Limit (PQL).



LABORATORY REPORT

EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF.#:	9,418
REPORT DATE:	August 2, 1994	STATION:	MW-4
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	15:50
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	July 30, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	BPQL
Toluene	1	6
Ethylbenzene	1	BPQL
m+p-Xylene	2	3
o-Xylene	1	BPQL
Chlorobenzene	1	BPQL
1,2-Dichlorobenzene	1	BPQL
1,3-Dichlorobenzene	1	BPQL
1,4-Dichlorobenzene	1	BPQL
MTBE	1	BPQL

Surrogate % Recovery: 100%

BPQL = Below Practical Quantitation Limit (PQL).



LABORATORY REPORT

EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF.#:	9,418
REPORT DATE:	August 2, 1994	STATION:	MW-4
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	15:50
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	July 30, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	BPQL
Toluene	1	6
Ethylbenzene	1	BPQL
m+p-Xylene	2	3
o-Xylene	1	BPQL
Chlorobenzene	1	BPQL
1,2-Dichlorobenzene	1	BPQL
1,3-Dichlorobenzene	1	BPQL
1,4-Dichlorobenzene	1	BPQL
MTBE	1	BPQL

Surrogate % Recovery: 100%

BPQL = Below Practical Quantitation Limit (PQL).



LABORATORY REPORT

EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF.#:	9,418
REPORT DATE:	August 2, 1994	STATION:	Trip Blank
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	10:00
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	July 30, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	BPQL
Toluene	1	BPQL
Ethylbenzene	1	BPQL
m+p-Xylene	2	BPQL
o-Xylene	1	BPQL
Chlorobenzene	1	BPQL
1,2-Dichlorobenzene	1	BPQL
1,3-Dichlorobenzene	1	BPQL
1,4-Dichlorobenzene	1	BPQL
MTBE	1	BPQL

Surrogate % Recovery: 101%

BPQL = Below Practical Quantitation Limit (PQL).



LABORATORY REPORT

EPA METHOD 8020 ANALYTES + MTBE with GC/MS Confirmation

CLIENT NAME:	Groundwater of Vermont	PROJECT CODE:	V93-038
PROJECT NAME:	Blouin Property	REF. #:	9,418
REPORT DATE:	August 2, 1994	STATION:	Trip Blank
DATE SAMPLED:	July 27, 1994	TIME SAMPLED:	10:00
DATE RECEIVED:	July 29, 1994	SAMPLER:	Ron Miller
ANALYSIS DATE:	July 30, 1994	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	BPQL
Toluene	1	BPQL
Ethylbenzene	1	BPQL
m+p-Xylene	2	BPQL
o-Xylene	1	BPQL
Chlorobenzene	1	BPQL
1,2-Dichlorobenzene	1	BPQL
1,3-Dichlorobenzene	1	BPQL
1,4-Dichlorobenzene	1	BPQL
MTBE	1	BPQL

Surrogate % Recovery: 101%

BPQL = Below Practical Quantitation Limit (PQL).



CHAIN OF CUSTODY RECORD

ANALYSIS STATUS: *Telecon w/ ks.*
~~RUSH (2-DAY)~~
~~PRIORITY (4-DAY)~~
 BEST AVAILABLE TIME

PROJECT NUMBER: 194-038
PROJECT NAME: BLOVIN PROPERTY
PROJECT LOCATION: ST. ALBANS, VT
PROJECT MANAGER: RON MILLER
COLLECTED BY: RON MILLER
DATE: 7/27/94

ANALYSIS REQUESTED

PAGE ____ OF ____

94 1 8

[illegible]

MATRIX

W = AQUEOUS
S = SOLIDS

PRESERVATIVE

1 = ICED

A = ACIDIFIED (4) res. 1:1 HCl

B = BASE

N = SODIUM BISULFATE

RELINQUISHED BY

DATE

TIME

RECEIVED BY

Aminda K. ...	7/29/14	7:55 AM	[Signature]
---------------	---------	---------	-------------

GroundWater of Vermont

The Chace Mill, One Mill Street, Box C-5, Burlington, Vermont, 05401
(802)-860-6065 (802)-860-6076 Fax

CHAIN OF CUSTODY RECORD

1 week turnaround
LABORATORY per 7/28/94

LABORATORY per 7/28/99

ANALYSIS STATUS: *Telecom*
W/ L

 RUSH (2-DAY) KS.

PRIORITY (4-DAY)

BEST AVAILABLE TIME

PROJECT NUMBER: V94-038
PROJECT NAME: BLOVIN PROPERTY
PROJECT LOCATION: ST. ALBANS, VT
PROJECT MANAGER: RON MILLER
COLLECTED BY: RON MILLER
DATE: 7/27/94

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PROJECT MANAGER: RON MILLER

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ANALYSIS REQUESTED

METALS - PLEASE LIST: MA () EP-TOX () (B)

OIL & GREASE: IR () GRAY. ()

VOLATILE ORGANICS: 624 () 601 () 602 ()
 6010 () 6015 () 6020 & MTBE ~~()~~

EXTRACTABLES:	ACIDS ()	B-N ()	PCBa ()
	PESTS ()		600/6000 ()

TSS	()	TDS	()	pH	()	SPEC COND	()
-----	-----	-----	-----	----	-----	-----------	-----

BACTERIA: SPC () TOT COU () FEC COU ()

CYANIDE AMEN () TOT ()

CL () F () 504 ()

	ED4		ED4		ED4		ED4
(ED4	(ED4	(ED4	(ED4

TCP: METALS () VOLATILES () PESTICIDES ()
SEMI-VOLATILES () HERBICIDES ()

OTHER _____

OTHER _____

PAGE ____ OF ____

[illegible]

MATRIX

W = AQUEOUS
S = SOLIDS

PRESERVATIVE

1 = ICED

A = ACIDIFIED (4) rps. 1:1 HCl

B = BASE

N = SODIUM BISULFATE

RELINQUISHED BY

Amund K. A.

DATE _____

7/24/14

TIME

75A

RECEIVED BY

[Handwritten signature]

